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# Improving Learning Through Information Technology

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## Pre-College Conference 2014 - Teaching with Technology - Barry Bandstra

The beginning of a new academic year can be an exciting time: new faculty colleagues, new students, and new construction. Lots of it. But it can also be an anxious time. After a summer of research and writing, now's maybe the time we think most intentionally about our teaching. Or maybe this coming Monday evening before your first class. And these days we've got the added excitement, and maybe added burden, of thinking about what to do with technology in our teaching. Technology has become the medium of commerce, social life, entertainment, and, of course, also higher education and what we do here.

### Relentless March of Educationally Impactful Technology

The relentless march of new educational technologies seems designed to keep us off balance. Always some new app or new device to learn. Used to be we could sail into the new year confident we were on top of things. Not so much anymore. There are just too many apps out there that look just amazing, and we're thinking, yea, I need to learn this, and, yea, I need to use that. Or we're thinking, oh no, not another thing I'm expected to master. This march of new tech and new technique, from iPad to MOOC, maybe has us wondering what new next big thing this year will bring. Your guess is as good as mine.

By the way, Teaching Naked is not a book about sartorial undress, but it's the book about the flipped classroom that the Innovation Book Circle read last year.

### Google Glass and Oculus Rift

One thing it might be is wearable devices such as Google Glass and Oculus Rift. Wired Magazine senior editor Peter Rubin said this about the Rift: "As far as your brain is concerned, there's no difference between experiencing something on the Rift and experiencing it in the real world." —

“Doubters gonna doubt, but we’ve tried the thing. It’s almost indistinguishable from magic.” Virtual reality just may be the new frontier. Imagine the possibilities for teaching.

Or, the year may bring something else. Perhaps the “internet of things” as it is being called, where all our devices begin talking to each other.

Clayton Christensen “The Disruptor

Adding to our insecurities — there are lots of voices telling us that higher education needs fundamentally to change its way of doing business — that higher ed is the next industry in line for massive disruption. Clayton Christensen tells us that MOOCs are going to put us small time liberal artsy types out of business in favor of the R1 academic superstars who will corner the market.

The Uncertain Future of Academic Work

This Chronicle of Higher Education “Academic Workplace 2014” article explores the way technology is shaking up the traditional duties and job securities of professionals like us working within higher education.

Yahoo 28 jobs endangered

A Pew Research Center survey recently reported that experts are split on whether tech will destroy more jobs than it creates. Notice the last comment bottom left — “Sorry” they say — how glib of them to offer condolences to us Teachers and Librarians. Hey, that’s my job you’re talking about!

Vertigo

Future shock is here and it’s enough to induce vertigo in even the most intrepid instructors among us.

So how can we get our heads around the situation?

## NMC Horizon Report

Every year the New Media Consortium in cooperation with EDUCAUSE produces a report of what they can see in their crystal ball. It covers teaching, learning and creative activity in three different sectors: K-12, higher education, and museum education. Let's look at the six trends they have identified for immediate and more distant futures in higher education as a way to survey the landscape. And let's think about them in the context of Hope.

### 1 Growing Ubiquity of Social Media

You've just landed from another planet if you're not aware of everyone's obsession with social networking apps and toys, including your great-grandmother. Question is, how is this affecting higher education? - beyond our students constantly checking Facebook on their cells under their desks thinking we don't notice.

Relationships are ultimately the lifeblood of social media"

How can we leverage social media within our courses to build meaningful relationships that promote engaged and deep learning? - student to student, students to teacher, and students to their institution? Can we use it to further personalize and engage them? We need to continue a serious campus conversation about how to do this well and learn from our colleagues, like Deb Van Duinen, who are already effective at it, and for that matter, also our Admissions Office.

Late breaking news: Hope has just recently contracted with Google for Hangouts to become part of our Google Apps. With it you will be able to do video conferencing with up to 15 people using your 1.Hope login credentials. And, all our students will automatically be enrolled in Hope Hangouts as well.

### 2 Integration of Online, Hybrid, and Collaborative Learning

Aside from purely online courses, online modes of teaching and learning are increasingly being used within traditional classroom settings.

### The Flipped Classroom

The flipped classroom typically moves content delivery outside the physical classroom prior to class meetings, and students are increasingly being held responsible for assimilating material before class. This can radically change what goes on in the classroom. Are we faculty prepared and trained for such changes? How can we do better? One effort, the “Teaching Naked” Innovation Book Circle addressed this directly and the class projects that came out of the discussions put flipped into practice. Let’s learn from our colleagues here too.

On a side note, the Academic Computing Committee and CIT would love to sponsor another Innovation Book Discussion, and if any of you know of a great tech and teaching book we could all read and discuss, please get in touch.

### The Lecture is Dead. Long Live the Lecture.

It has become a truism of the flipped classroom that lecturing for 50 minutes is passé and probably never was all that effective, especially after continued use. But we still need to deliver course content and disciplinary perspective, ...

### Screencasting

and that’s where screencasting can be an effective tool — think animated slideshows with live web links, built-in interaction, and voiceover.

Screencasting is the new Lecture: only shorter, modularized, snappier, perhaps more entertaining, and, unlike the “live you”, always available to your students.

### 3 Rise of Data-Driven Learning and Assessment

Digital technologies have enabled the collection of massive amounts of behavioral data.

## Big Data

The age of big data is upon us. And, it seems, either you get some or you get left behind. Big Data is how the Wall Street quants get the jump on the rest of us. And look at how wealthy they've become.

## SALT and Moodle

We gather data on teaching and learning at Hope. SALT essentially gives instructors a general sense of what is working or not in their courses, and a feel for how students rate their courses comparatively across the institution. All good and important institutional data. But what about data on student learning? This is where Moodle can supplement SALT.

## Moodle Student Data

Moodle engages analysis from the bottom up, providing individual student performance data so instructors can gauge how students are doing.

Moodle data holds the promise of realtime assessment of student performance within and across courses to identify any number of student strengths and weaknesses in order to personalize the learning experience. Student engagement data can be found in your Moodle administration menu under Reports. You should check it out.

And while SALT and Moodle data are useful, they will pale in comparison to what next generation learning management systems will be able to do for us.

## 4 Shift from Students as Consumers to Students as Creators

Hope does a great job of celebrating and displaying student research, with the likes of NCUR and the DeVos Fieldhouse research celebration every spring, as well as numerous departmental and divisional events. We could

extend the reach of such research in additional exciting ways. Open Research and Open Access are not just for faculty.

Github, etc.

We faculty should be aggressive in making our data and analysis public and easily accessible, and we should consider training our students in the technologies that make this possible. And we need to continuing encouraging them to make public their work in new ways. This next suggestion will be controversial and maybe unworkable, but could/should we promote and teach basic coding skills as a liberal art, on the order of writing and critical thinking? Should we consider teaching basic tools such as HTML and CSS, Git and the free versioning repository site Github, and should we teach them how to build and deploy interactive web pages using Google Sites and other tools?

Bartling - Open Science.

Quick Bibliographic Note. Here's a useful book on open access that is freely available from our library's Springer Verlag resource site. I'm a big fan of the book and our library for making full text ebooks like this available. This is a useful resource not just for doing open science but is applicable to all fields.

## 5 Agile Approaches to Change

Looking more to the long haul, as a community we need to continue to nurture and cultivate an ethic of experimentation and innovation. The Academic Computing Committee actively promotes innovation among the faculty, with its innovation fund and innovation award, and these have generated exciting results. There are other exciting campus efforts, such as the Center for Faithful Leadership's Entrepreneurial Development incubator that promotes student innovation. But we've got to do more.

## Don't Just Stand There...

Every summer during my high school, college, and even graduate school years, I worked as a laborer and then carpenter on residential framing crews in the Chicago suburbs. Our job was to get the basic structure up as soon as possible. Hustle was the name of the game. So when the foreman saw me deliberating how best to frame out a soffit or a closet he would scream at me — “Bandstra, Don’t just stand there, do something, even if it’s wrong!”

It’s a lesson I’ve lived with ever since — though today I try to take it in a slightly more positive direction: “do something, even if you’re not sure”. Part of cultivating innovation is creating an accepting and supportive environment that, sure, is looking for results, but also understands that not everything is going to work out and be perfect the first time around. It takes courage to try something new. We need to help each other find that courage, and feel secure acting on it.

## Seed your thinking

Make the most of opportunities as they arise. Check out available resources, especially blogs in your field which can inspire your pedagogical thinking. And take advantage of campus resources as best you have time. On this note I’m excited that we have a new colleague this year who can help us experiment with new technologies. I would like Alex Galarza, our Mellon Digital Liberal Arts Fellow, to stand up and be recognized.

## 6 Evolution of Online Learning

Online learning, especially within a residential liberal arts college, can be a rather vexed notion. And for good reason. It challenges traditional definitions of personal relationship that stand at the core of our mission. Some of us categorically resist the inroads of technology mediated teaching. Others are more open to the opportunities the new online modalities might offer. Both have their reasons. But wherever online has



taken us and will take us, is it here to stay. All the same, what it is doing to teaching and learning needs to be one of our ongoing conversations.

### Take a MOOC

One way to inform the conversation is to try things out. MOOCs grabbed the headlines last year with a vengeance — both in the popular press and in the higher ed rags. As we all wrestle with the potential of online learning, one way to judge its value is to take a MOOC. Just out of curiosity let me ask, how many of us have signed up for a MOOC? Maybe I should also ask for a show of hands, but I won't — How many have completed one?

### MOOC providers

So judge for yourself. There are lots of MOOCs out there. If you haven't already, enroll in one and see what all the fuss is about.

### Teach a Summer Online Course

Another way to dip your foot into online learning waters is by teaching a Hope summer online course. Hope faculty have been delivering online courses during our summer terms since 2006. There's no better way to hone online teaching skills than to teach an online course, and it can have tremendous benefits also for your use of tech in other courses.

### Summer Online Course Graph

Not only do students appreciate taking courses from us at their own convenience, they love being able to make progress on their degrees over the summer, often saving themselves money by eliminating the need to return for a 9th semester.

### Ask Big Questions of Technology

Liberal arts courses are great at asking the big questions. The same goes for how we teach. Teaching with tech is not just a matter of acquiring skills

and techniques. Online modalities profoundly affect the culture of teaching and learning where they are used. And we're just beginning to understand how. We should be talking with each other and with our students about the impact and effects of technology on learning and on people. What better place to raise meta questions about technology than at a liberal arts college?

And that's also what we'll be doing come September.

### Critical Issues Symposium: Technology and the Future of Being Human

Let me put a plug in for our upcoming Critical Issues Symposium which will feature important keynote addresses as well as faculty and student led focus sessions. Save the date.

### Program or be Programmed

Our opening keynote will be presented by Douglas Rushkoff, an influential author, graphic novelist, media theorist, and documentary filmmaker, with PBS documentary specials to his credit. He has thought long and hard about technology and the modern world. I'm especially taken with his technology manifesto titled "Program or Be Programmed" which I used in my FYS last fall. His "10 Commands For a Digital Age" could just as well be termed "10 Commands for Being Human".

### 10 Commands for a Digital Age

Each of his 10 commands for a digital age make an important point, but I especially like his last one - "Program or Be Programmed". In other words, know and control the technology you are using, or it will be using you.

Facebook and Google come first to mind. Great apps but they're not free — they own you. We need to talk about what technology is doing to us also at the deepest levels of being human.

So where does that leave us? Overwhelmed by technology? - no doubt. Awed by it? - maybe. Eager to try new things? - hopefully. But what to do now?

Here's one suggestion:

### Keep Calm and Moodle On

Build on the skills you might already know. Learn new ones as you have opportunity. Stirred. Not shaken.

### Challenge yourself

Find one good thing Moodle or other ed tech can do for you this semester and give it a try.

### Monument Valley -

Also know that becoming digitally savvy is a long road in one direction. It takes time and some hard work. It's a journey and a destination. So pack your bag, rev up your engine, and go for a drive. Preferably on a motorcycle.

### Conclusion: Open Questions

Because these talks are intended to promote conversation among us, I've come up with a few starter questions. But feel free to comment or respond in any way you see fit.